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| 10/071,475   | 02/07/2002  | Ivan N. Vukovic      | CE08733R                        | 1921                        |
| 22917  | 7590        | 10/10/2007           |                                 |                             |
| MOTOROLA, INC.<br>1303 EAST ALGONQUIN ROAD<br>IL01/3RD<br>SCHAUMBURG, IL 60196 |             |                      | EXAMINER<br>DUONG, CHRISTINE T  |                             |
|  |             |                      | ART UNIT<br>2616                | PAPER NUMBER                |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

Application No.

10/071,475

Applicant(s)

VUKOVIC ET AL.

Examiner

Christine Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08) ✓  
Paper No(s)/Mail Date \_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The references listed in the Information Disclosure Statement, filed on 07 February 2002, 30 June 2003 and 03 October 2006, have been considered by the examiner (see attached PTO-1449 form or PTO/SB/08A and 08B forms).

### ***Claim Objections***

1. Claim 7 is objected to because of the following informalities: it is suggested to rewrite "NAK generator to generator to generate NAKs" in line 5 as --NAK generator to generate NAKs--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (US Patent No. 5,414,717).

Regarding claim 7, Matsumoto et al. discloses an apparatus comprising:

a buffer storing NAKs ("the NAK register 14 stores NAK data, as shown in FIG. 5(d), being a signal train which announces when anything abnormal occurs at the time of reception to the transmission side terminal and has high priority (dominant) at transmission line 50" column 8, lines 22-27 and fig. 4); and

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logic circuitry coupled to the buffer (fig. 4), the logic circuitry having a transmission status of a transmitter as an input and outputting instructions for a NAK generator to generate NAKs based on the transmission status of the transmitter ("reference character 3 designates a transmitting buffer for storing a transmission data train which has been transferred from the control microcomputer 30 through the microcomputer interface 1 and is to be transmitted to the other communication terminal. Reference character 4 designates a receiving buffer for storing a reception data train which has been delivered from another communication terminal and has been transmitted to this communication terminal through the transmission line 50. The transmitting buffer 3 and the receiving buffer 4 are controlled by the buffer control circuit 5 so that storing and reading out of the data train are carried out" column 7, lines 14-26 and further "the RSP control circuit 12 controls the ACK register 13 and the NAK register 14 to transmit RSP" column 8, lines 17-18).

Regarding claim 8, Matsumoto et al. discloses everything claimed as applied above (see claim 7). In addition, Matsumoto et al. discloses the transmission status of the transmitter comprises information on whether or not data or other channel information is currently awaiting transmission ("reference character 3 designates a transmitting buffer for storing a transmission data train which has been transferred from the control microcomputer 30 through the microcomputer interface 1 and is to be transmitted to the other communication terminal" column 7, lines 14-18).

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***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. further in view of Shiroshita et al. (US Patent No. 5,892,894).

Regarding claim 1, Matsumoto et al. discloses a method of negative acknowledgment (NAK) suppression, the method comprising the steps of:

determining that a NAK needs to be transmitted ("the RSP control circuit 12 controls the ACK register 13 and the NAK register 14 to transmit RSP" column 8, lines 17-18);

determining if data or other channel information currently needs to be transmitted over a channel ("reference character 3 designates a transmitting buffer for storing a transmission data train which has been transferred from the control microcomputer 30 through the microcomputer interface 1 and is to be transmitted to the other communication terminal" column 7, lines 14-18); and

transmitting the NAK if data and other channel information does not need to be transmitted over the channel, otherwise buffering the NAK ("in the case where the transmission error detection circuit 9 judges that there is no RSP 110 or that RSP data is NAK (step S7, S8), the transmission error detection circuit 9

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announces occurrence of a no RSP error or a NAK error to the buffer control circuit 5 (step S12, S13)" column 11, lines 56-59 and "the NAK register 14 stores NAK data, as shown in FIG. 5(d), being a signal train which announces when anything abnormal occurs at the time of reception to the transmission side terminal and has high priority (dominant) at transmission line 50" column 8, lines 22-27).

However, Matsumoto et al. fails to specifically disclose transmitting the NAK if data and other channel information does not need to be transmitted over the channel, as claimed.

Nevertheless, Shiroshita et al. teaches "the server 100 notifies the terminal 300-3 about the fact that it is in a poor performance state and the data transmission is interrupted, by means of the poor performance notification (step S203)" (Shiroshita et al. column 7, lines 15-18).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to transmit the NAK if data and other channel information does not need to be transmitted over the channel because "the server 100 carries out the re-transmission of the unreceived data with respect to the terminal 300-3 which is in the poor performance state (step S205)" (Shiroshita et al. column 7, lines 26-29).

Regarding claim 2, Matsumoto et al. and Shiroshita et al. disclose everything claimed as applied above (see claim 1). In addition, Matsumoto et al. discloses transmitting the NAKs if the predetermined number of NAKs have been buffered, otherwise buffering the NAK ("the RSP control circuit 12, after detecting

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the EOD 104 (step S41), delivers NAK data of higher priority (dominant) signal train at the transmission line 50 stored in the NAK register 14 to the transmission line 50 by the frame shown in FIG. 6(c) through the communication control circuit 6 (step S42). Thus it announces that an overrun error has occurred at the reception side terminal (step S43) and the transmission side terminal to deliver again a transmission after a time delay for reading out the receiving buffer 4" column 10, lines 19-28).

However, Matsumoto et al. Fails to specifically disclose determining if a predetermined number of NAKs have been buffered, as claimed.

Nevertheless, Shiroshita et al. teaches "the terminal is judged as a poor performance terminal according to a data receiving state of the terminal indicated by the negative acknowledge (NACK) from the terminal or a number of times for which a time-out occurs while not receiving any acknowledge from the terminal" (Shiroshita et al. column 6, lines 13-20).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to determine if a predetermined number of NAKs have been buffered because "in a case of using a number of times for which a time-out occurs while not receiving any acknowledge from the terminal, the acknowledge from the terminal is urged by an inquiry packet, and when the time-out is repeated for over a prescribed number of times, the terminal is judged as a poor performance terminal" (Shiroshita et al. column 6, lines 22-27).

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Regarding claim 3, Matsumoto et al. and Shiroshita et al. disclose everything claimed as applied above (see claim 2). However, Matsumoto et al. fails to specifically disclose the step of transmitting the NAKs if the predetermined number of NAKs have been buffered comprises the step of transmitting the NAKs if the number of NAKs is equal to an amount of NAKs required to fill an over-the-air frame, as claimed.

Nevertheless, Shiroshita et al. teaches "the judgment result is notified to the terminal state management unit 106. In a case of using a number of times for which a time-out occurs while not receiving any acknowledge from the terminal, the acknowledge from the terminal is urged by an inquiry packet, and when the time-out is repeated for over a prescribed number of times, the terminal is judged as a poor performance terminal" (Shiroshita et al. column 6, lines 20-27).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to transmit the NAKs if the number of NAKs is equal to an amount of NAKs required to fill an over-the-air frame because "the terminal performance judgment unit 107 judges whether the terminal 300 is in the poor performance state or not according to the acknowledge returned from the terminal 300" (Shiroshita et al. column 6, lines 13-16).

Regarding claim 4, Matsumoto et al. discloses a method comprising the steps of:

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determining that a NAK needs to be transmitted over a channel ("the RSP control circuit 12 controls the ACK register 13 and the NAK register 14 to transmit RSP" column 8, lines 17-18);

determining a number of NAKs currently buffered; and

transmitting the NAKs currently buffered along with the NAK if the predetermined number of NAKs have been buffered, otherwise buffering the NAK ("the RSP control circuit 12, after detecting the EOD 104 (step S41), delivers NAK data of higher priority (dominant) signal train at the transmission line 50 stored in the NAK register 14 to the transmission line 50 by the frame shown in FIG. 6(c) through the communication control circuit 6 (step S42). Thus it announces that an overrun error has occurred at the reception side terminal (step S43) and the transmission side terminal to deliver again a transmission after a time delay for reading out the receiving buffer 4" column 10, lines 19-28).

However, Matsumoto et al. fails to specifically disclose that determining a number of NAKs currently buffered, as claimed.

Nevertheless, Shiroshita et al. teaches "the terminal is judged as a poor performance terminal according to a data receiving state of the terminal indicated by the negative acknowledge (NACK) from the terminal or a number of times for which a time-out occurs while not receiving any acknowledge from the terminal" (Shiroshita et al. column 6, lines 13-20).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to determine a number of NAKs currently buffered because "in a case of using a number of times for which a

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time-out occurs while not receiving any acknowledge from the terminal, the acknowledge from the terminal is urged by an inquiry packet, and when the time-out is repeated for over a prescribed number of times, the terminal is judged as a poor performance terminal" (Shiroshita et al. column 6, lines 22-27).

Regarding claim 5, Matsumoto et al. and Shiroshita et al. discloses everything claimed as applied above (see claim 4). In addition, Matsumoto et al. discloses determining if data or other channel information currently needs to be transmitted over the channel ("reference character 3 designates a transmitting buffer for storing a transmission data train which has been transferred from the control microcomputer 30 through the microcomputer interface 1 and is to be transmitted to the other communication terminal" column 7, lines 14-18); and transmitting the NAK if data and other channel information does not need to be transmitted over the channel, otherwise buffering the NAK ("in the case where the transmission error detection circuit 9 judges that there is no RSP 110 or that RSP data is NAK (step S7, S8), the transmission error detection circuit 9 announces occurrence of a no RSP error or a NAK error to the buffer control circuit 5 (step S12, S13)" column 11, lines 56-59 and "the NAK register 14 stores NAK data, as shown in FIG. 5(d), being a signal train which announces when anything abnormal occurs at the time of reception to the transmission side terminal and has high priority (dominant) at transmission line 50" column 8, lines 22-27).

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However, Matsumoto et al. fails to specifically disclose transmitting the NAK if data and other channel information does not need to be transmitted over the channel, as claimed.

Nevertheless, Shiroshita et al. teaches "the server 100 notifies the terminal 300-3 about the fact that it is in a poor performance state and the data transmission is interrupted, by means of the poor performance notification (step S203)" (Shiroshita et al. column 7, lines 15-18).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to transmit the NAK if data and other channel information does not need to be transmitted over the channel because "the server 100 carries out the re-transmission of the unreceived data with respect to the terminal 300-3 which is in the poor performance state (step S205)" (Shiroshita et al. column 7, lines 26-29).

Regarding claim 6, Matsumoto et al. and Shiroshita et al. disclose everything claimed as applied above (see claim 4). However, Matsumoto et al. fails to specifically disclose the step of transmitting the NAKs if the predetermined number of NAKs have been buffered comprises the step of transmitting the NAKs if the number of NAKs is equal to an amount of NAKs required to fill an over-the-air frame, as claimed.

Nevertheless, Shiroshita et al. teaches "the judgment result is notified to the terminal state management unit 106. In a case of using a number of times for which a time-out occurs while not receiving any acknowledge from the terminal, the acknowledge from the terminal is urged by an inquiry packet, and when the

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time-out is repeated for over a prescribed number of times, the terminal is judged as a poor performance terminal" (Shiroshita et al. column 6, lines 20-27).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to transmit the NAKs if the number of NAKs is equal to an amount of NAKs required to fill an over-the-air frame because "the terminal performance judgment unit 107 judges whether the terminal 300 is in the poor performance state or not according to the acknowledge returned from the terminal 300" (Shiroshita et al. column 6, lines 13-16).

Regarding claim 9, Matsumoto et al. discloses everything claimed as applied above (see claim 7). However, Matsumoto et al. fails to specifically disclose the logic circuitry additionally outputs instructions for the NAK generator to generate NAKs based on a number of NAKs stored in the buffer, as claimed.

Nevertheless, Shiroshita et al. teaches "the terminal is judged as a poor performance terminal according to a data receiving state of the terminal indicated by the negative acknowledge (NACK) from the terminal or a number of times for which a time-out occurs while not receiving any acknowledge from the terminal" (Shiroshita et al. column 6, lines 13-20).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to output instructions for the NAK generator to generate NAKs based on a number of NAKs stored in the buffer because "in a case of using a number of times for which a time-out occurs while not receiving any acknowledge from the terminal, the acknowledge from the

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terminal is urged by an inquiry packet, and when the time-out is repeated for over a prescribed number of times, the terminal is judged as a poor performance terminal" (Shiroshita et al. column 6, lines 22-27).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Duong whose telephone number is (571) 270-1664. The examiner can normally be reached on Monday - Friday: 830 AM-6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CTD 10/01/2007 CTD

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